

Backup Services

Introduction

Computer users backup the data on their systems to insure against loss of computer files through:

- Accidental erasure – requires another copy of the file
- File corruption or disk failure – requires a copy of the file on different drive or media (e.g. tape, CD, DVD)
- Disaster such as fire or earthquake damage – requires a copy of the file at a different location unaffected by the disaster

The DOE contract and Lab policy specify that every owner of data or files is responsible their for protection, and should follow “best business practices” - generally accepted to mean storing copies of important data off site.

In general it is not necessary to backup operating system or commercially provided programs as these can be restored from Vendor provided media or from an image created and saved when the software was installed. Files stored file servers file servers managed by ITSD are fully backed up by the service provider and do not require any user action to protect. Data and lab-developed programs should be backed up if

1. They are valuable enough that they would need to be recreated, and
2. They would be more expensive to recreate than to back up regularly.

Backup Options for LBNL Computer users

1. Data can be backed up on removable media such as Diskettes, Zip Drives, CDs and DVDs on the owner’s computer. These may be sufficient to insure relatively small quantities of data against the risks of accidental erasure and file corruption or disk failure.
2. Users can install their own tape backup service as part of servers or as standalone systems. These are relatively expensive to purchase and install, but relatively inexpensive to operate.

For both the above options, Computer users need to take steps to ensure that their back-up copies are accessible and readable. Media are susceptible to errors caused by being dropped heat, dust, magnetism etc. and must be handled and stored carefully to ensure data can be read again when needed. Making duplicates and storing off site is the only way to protect data in the event of damage to the room where they are kept.

3. Users can use ITSD provided backup services. These provide all the features required to fully protect data against all risks.

Description of ITSD Service

Scope

The new service using Veritas Netbackup can backup data from computers using current versions of most Unix operating systems including Linux, Solaris, IRIX, AIX, Free BSD HPUX, Mac OS X, NetBSD and Unicos. PCs and Macs are currently backed up using different systems, but Netbackup is being evaluated as a potential alternative for these systems as well. ITSD also still operates a backup system based on Legato Networker that will continue to be used for older versions of operating systems not supported on the Veritas system.

Backup Service

Specified files are automatically backed onto DLT tapes. Customers can also be granted the ability initiate a file backup at other times. Monthly full copies of the data are made, and incremental copies are made each night, copying only the data that has changed since the previous backup. Each tape is cloned to produce a duplicate tape and to ensure that the original tape is readable. The original tapes are kept on site and the clones are sent weekly to a secure vendor provided off-site facility. All tapes are retained for 90 days.

File Restoration

Files are restored on request by the backup service staff. Response to a request is usually within four business hours. Time taken to complete file restoration depends on factors such as age of the copy being restored, priority of request and number of other pending requests. The ability to restore recently backed up files without operator intervention can be granted to customers.

Price

The current service for Unix systems charged at \$25 per gigabyte per month based on the size of the partition being backed up. In February the billing for Veritas based backups will be changed to be based on the actual amount of data transferred and the rate per gigabyte will be reduced (the rate is currently being finalized but is expected to be about \$15 per gigabyte). Since the cost of providing the service is largely fixed, the price is very sensitive to volume. If the number of systems using the service increases we will be able to lower the price proportionately, providing a more cost-effective service for each customer.